

Enabling access to private financing for private investment into renewable energy in Afghanistan

Report created for GIZ IDEA (Institutional Development for Energy in Afghanistan)

by

Márton Kerkápoly, Senior Private Sector Development Consultant

Delivered February 2018

Table of Contents

Introduction	3
Background of consulting and tasks	3
Structure of report	3
1. Problems	5
1.1. What is private sector investment into RE?	5
1.2. Current state of private finance in Afghanistan for private sector investments into RE projects.....	6
1.3. Conclusion	7
2. Solutions	8
2.1. Goal.....	8
2.2. Elements and logic of a solution package	8
2.2.1. TRANSPARENT TARIFF SYSTEM	9
2.2.2. IPP STANDARDS FOR LICENSING	10
2.2.3. TRANSPARENT AND STANDARDIZED POWER PURCHASE AGREEMENTS SYSTEM	10
2.2.4. WHEELING AND CAPTIVE POWER SOLUTIONS REGULATION	11
2.2.5. ADDITIONAL CERTIFICATION OF RE COMPANIES	12
2.2.6. CAPACITY DEVELOPMENT FOR PRIVATE INVESTORS and FINANCIAL INSTITUTIONS...	12
2.2.7. STANDARDIZED BUSINESS MODELS.....	12
2.2.8. ADDITIONAL INSTRUMENTS	13
2.3. Conclusions.....	14
3. Actions	15
3.1.1. STANDARDIZED BUSINESS MODELS.....	15
3.1.2. CAPACITY DEVELOPMENT FOR PRIVATE INVESTORS and FINANCIAL INSTITUTIONS...	17
3.1.3. ADDITIONAL CERTIFICATION OF RE COMPANIES	17
3.1.4. IPP STANDARDS FOR LICENSING	18
3.1.5. WHEELING AND CAPTIVE POWER SOLUTIONS REGULATION	18
3.1.6. TRANSPARENT AND STANDARDIZED POWER PURCHASE AGREEMENTS SYSTEM	19
3.1.7. TRANSPARENT TARIFF SYSTEM	19
3.1.8. ADDITIONAL INSTRUMENTS	20
3.1.9. LIST OF ALL ACTION ITEMS IN CHRONOLOGICAL ORDER AND WITH AN APPROXIMATION OF NECESSARY AMOUNT OF EFFORT	21
4.	23
5. General Conclusion.....	24

Introduction

Background of consulting and tasks

The consultant was hired to conduct a fact finding and analytical exercise on financing mechanism in Afghanistan. The consultancy built and its recommendations builds on the work of IDEA. It created the regulatory and policy framework necessary for private investment into renewable energy in Afghanistan. In preparation of the next phase of IDEA, the consultancy was tasked to find solutions and suggest activities to IDEA that would enable more private sector investment into renewable energy production, fostering access to electricity for the general population as well as for businesses.

The basic goal of the consultancy is firstly, to understand the current situation of financing mechanisms in Afghanistan available for the financing of private investments (domestic) in the renewable energy (RE) projects leading to a self-sustaining and sustainable extension of the access to clean energy for the broader population in and outside of load centers. Secondly to analyze the current situation of private financing options of the RE market in Afghanistan with regards; and thirdly, to derive a set of recommendation for IDEA for actions to unlock dormant funds for private investment and to thus induce a more dynamic development of the RE market in Afghanistan.

The outcome of the consultant's activities are presented in three pieces:

1. Analytical report about the current state and opportunities of RE financing in Afghanistan, and an overview of the most pressing barriers for RE market development. Delivered by Ahmad Shah Yaqubi in December 2017.
2. A focused working group session to discuss the findings and to derive a set of actions for all stakeholders and GIZ/IDEA to unlock the underused funds for RE. Delivered in Delhi, October 2017.
3. A final report, encompassing both points above with specific recommendations for IDEA and other stakeholders to coherently take actions for the creation of a self-enhancing and dynamic RE market in Afghanistan with an increased access to finance for investors.

The methodological approach was split into five phases, which overlap.

1. Conduct on the ground and desk research based data collection.
2. Conduct analysis and discuss outputs with stakeholders.
3. Development of solutions and discussion of these with stakeholders.
4. Formulization of recommendations into actionable items for IDEA.
5. Summary of all into one written piece to form the basis for next steps.

This report assumes a basic knowledge and awareness of the Afghan circumstances and energy sector conditions and is targeted at an expert audience in GIZ IDEA. For more background-oriented information on the overall energy sector, analytical reports are readily available online and can be obtained through the GIZ IDEA team in Kabul.

The following report is the cumulation of the work and efforts of many. It relied heavily on the support of the Mr. Ahmad Shah Yaqubi, who's immense efforts to gather relevant data were essential, and on the support and guidance of the GIZ IDEA team, in Kabul and Eschborn.

Structure of report

The report is split into four separate parts, that build upon each other.

The analytical segment called “1. Problems”, describes the current state and problems of private financing of private sector investments into renewable energy in Afghanistan.

On this basis, the action oriented segment, consisting of the three other parts of the report describes the necessary actions to mitigate and solve the described problems by highlighting the elements of a solution-structure, “2. Solutions”.

The third part called “3. Actions” describes the basic approach of a solution. This part will also suggest activities for IDEA for the short- and long-term.

The last part, called “4. Conclusions”, will summarize the findings.

1. Problems

This part uses the main findings of the analytical report developed by Mr. Ahmad Shah Yaqubi to reflect on the current situation in financing for RE in Afghanistan and to set the later described solution package into context.

For a more detailed view of the problems of financing system in Afghanistan, please refer to the “Assessment Report – Challenges of Afghanistan’s Renewable Energy Industry – Final Report” created by Ahmad Shah Yaqubi and delivered to GIZ-IDEA in December 2017.

1.1. What is private sector investment into RE?

To avoid confusion about the term “private sector investment” and to understand, why this kind of investment currently does de-facto not exist in Afghanistan, it is first necessary to realize what “private sector investment” is not.

Private sector investment is not a project, that has been setup by the government body and then publicly tendered to the private sector as the private actors are only passively involved into project design and financing.

Private sector investment is further not a heavily donor planned, financed and backed project, where the private investors’ risk is minimized to a non-context corresponding level or completely lifted.

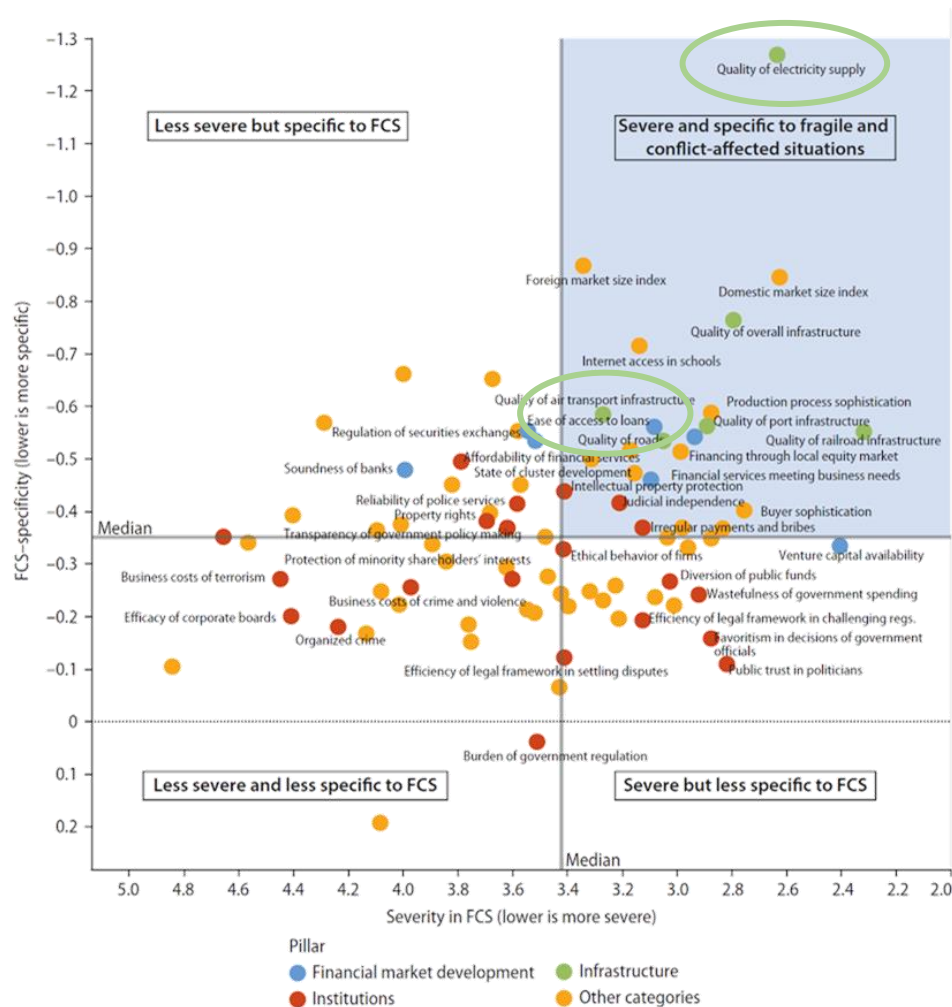
Private sector investment is not a project, that relies on case-by-case hand-outs, in-transparent and unsustainable subsidies on tariffs or actual construction costs.

Finally, the sale of RE equipment to customers even if with installation, is not private sector investment into RE. It is integrated wholesale of goods, without deeper knowledge of or involvement into the energy sector only fractionally changing the rates of access to energy.

None of these mentioned cases represent real private sector investment, as risks, project planning costs, demand driven supply of solutions to market prices and financing costs are not carried by the private investors. This means, that virtually none of all the so called “private sector investments” currently presented as such are really “private investments”, but hidden or indirect “donor investments/projects”. The slow increase in domestic RE production admits an ever-growing demand for energy shows, that the current solutions - virtually all based on a top-down, government and donor driven approach - are not sufficient and are - in the long run - unsustainable. As slowly realized by all stakeholders in Afghanistan’s energy sector, only an increase in private investment can induce a timely and demand-matching solution. Sadly, the above-mentioned style of “indirect” donor and public projects did not allow the necessary skills and knowledge to develop within the private sector in Afghanistan. It offtakes the burden of market research, technology mastering, planning, project management, client handling, cash flow management, cost calculation, financial modelling, etc. and reduces the Afghan private sector to the role of mere implementer of infrastructure instead of a long-term operator and service provider.

In the light of this, it is necessary to create an environment, in which the Afghan private sector can learn the necessary skills to become self-sufficient and market-opportunistic investors into RE.

The overall key role of these two topics, access to energy and loans, for the private sector in a context like Afghanistan is highlighted by a recent World Bank report focusing on investment competitiveness:

FIGURE 5.7 Perceptions on Severity and FCS-Specificity of Challenges, 2016

Source: World Bank Group: Global Investment Competitiveness Report 2017, p.146, available under: <http://www.worldbank.org/en/topic/competitiveness/publication/global-investment-competitiveness-report>

To overcome this limitations in lending to private sector, it is necessary to understand the basic problems of this segment of the market. In the following, the main problems derived from the research by the consultants will be presented.

1.2. Current state of private finance in Afghanistan for private sector investments into RE projects

In its current state, the private market for project financing in RE does not exist in Afghanistan. To put it differently: no Afghan or international bank, commercial or publicly owned, is currently financing RE projects for private sector investors based on market derived conditions.

There are two parties involved: the financial sector and the private sector investors. Both sides have somewhat contrary interests. While the banks want risk free repayment with a risk corresponding interest on the loans paid within the shortest possible time, the private investors look for low interest

rates and the longest possible repayment periods to lower the immediate financial burden as RE energy projects require a longer period to break even and reach profitability.

At the time of writing, none of the above interests are satisfied: there are no loans that could return a profit for the banks through rates. No loans mean, that the financial means are not available to the private sector to construct and operate RE projects and in turn could produce profits for the investor.

The main effects can be summarized as follows:

The banks are currently charging interest rates from 12 to up to 25% and have collateral rules prescribing between 200 to 300% of the loan value. Furthermore, the longest currently available credit term is 3 years. The few private companies engaged in RE projects on the other hand are neither in the financial situation to fulfill required collateral obligations towards the banks nor are they able to produce business models that could carry the required repayment. Furthermore, even if a business model could turn a profit, the credit term is far too short for any meaningfully sized RE project. For private investors, this setting is forbidding. Demand for private financing is thus inexistent. With no demand, the banks do not offer any financial products matching the requirements of RE projects.

The behavior of the banks, not bound by overregulation or limited liquidity,¹ is merely based on the over-estimation of risk. This leads to high interest rates, restrictive collateral rules and credit terms inappropriate for RE projects.

As the private sector - in its current state - is not able to convince the banks of the viability of RE projects and their ability to repay loans thus increasing the perceived risks. A market failure is thus immanent.

In summary, the current unavailability of private finance for private sector investments into RE is the result of a market failure triggered by an information gap about the investors ability to create and deliver profitable RE projects, an unclear market structure and a resulting over-estimation of the risk by the banks.

1.3. Conclusion

The above described situation can be seen as a “hen-and-the-egg” problem, where none of the two parties involved can move because of the other’s rational behavior. The problem thus cannot be solved by any of the two parties as this would mean engaging in non-economically justified risk taking for the financial sector and unjustified cost for the investors. The solution to this problem thus must come from a third side.

The next part of the report will provide a set of solution approaches to address this situation.

¹ See: “Assessment Report – Challenges of Afghanistan’s Renewable Energy Industry – Final Report”, December, 2018.

2. Solutions

To solve the above described problem, it is necessary to develop a solution package that then can be converted into actions for implementation. Clear goals have to be defined so all suggested solutions are aligned and most effectively arranged to reach set goals.

2.1. Goal

As shown, the current market failure limits the private sector driven development of RE projects and the creation of an energy market which in turn would increase competition with the effect of lower prices while enabling quicker access to electricity for private households and businesses.

The foremost goal is to reduce the barriers for banks to offer specific financial products to investors and to rise the private sectors ability to use these products effectively for investments into RE. As shown above, the market failure is unlikely to be resolved by the two involved parties as overcoming the informational mismatch would require a leap of faith by one of the parties even further increasing the risks involved. The interference of a third party, a neutral “agent of change”, is needed. The consultant recommends GIZ IDEA as this “agent of change”.

The solution package needs to consider all dimensions, that influence both, the banks’ and private sector’s ability to create offers for their respective customers yielding a profit while mitigating existing risks to the extent possible.

Furthermore, the package needs to address the currently limited capacities on both sides, the inexistent RE market and the mixed experiences of the final customers with RE projects. It thus has to devise an approach, that creates the nucleus for a RE market establishing a basis for further scaling up of projects, number of clients, generation capacities, quality and offer range. This would entail to start at the micro level.

Broken down, the solution package needs to address these concerns and shortcomings of banks and of private sector interested in RE investments:

Banks	Solution package	Private Sector
Knowledge to assess risks involved in RE projects implementation and operation		Basic instruments of business: project planning, demand assessment, technology matching, customer care, O&M
Business models that have a clear profitability profile		Easy to implement, simple structured business models that are scalable for future expansions
Assurance about the ability of the private sector investor to deliver RE projects		Certifications and capacity development to ensure meeting of quality requirements of licenses
Investment guarantees schemes for the startup phase		Tailored financial offers with standardized contracts matching standard business models

2.2. Elements and logic of a solution package

The solution package, as shown above, is made up of a set of interventions affecting both parties, banks and private sector, in different ways and is made up of these elements:

CAPACITY DEVELOPMENT FOR PRIVATE SECTOR and FINANCIAL INSTITUTIONS in RE projects implementation and understanding dynamics

TRANSPARENT AND STANDARDIZED PPA SYSTEM for profitability and cost calculations

IPP STANDARDS FOR LICENSING for transparent quality requirements for IPPs

WHEELING AND CAPTIVE POWER SOLUTIONS REGULATION for quick B2B solutions

ADDITIONAL CERTIFICATION OF RE COMPANIES in implementing RE projects

TRANSPARENT TARIFF SYSTEM for all RE projects

STANDARDIZED BUSINESS MODELS available for private sector investors

These interventions are on purpose broad in their approach and cover the full spectrum of requisites for a private sector driven RE market. The solutions package is designed to support the fostering of first private sector led projects with a bottom-up approach, starting from small scale projects with scalability built in to use the increase in capacity and knowledge to increase project sizes and technology use while extending the regional coverage.

This broad approach is necessary to overcome the currently very low capacity of the private sector and to kick-start real investment. For this to happen it is necessary to reduce the entry barriers for private (Afghan) investors by the support of project design and finance, cost and viability estimations, demand and market analysis to show case profitability of RE projects. By creating a controlled environment, capacity and trust can be developed faster and more focused than by mere general investment climate reforms not directed at any specific target.

The core element of this approach is a set of well-crafted and designed business models for the private sector to be picked up, that serve as the connecting element between all other interventions and activities in the above showcased solutions package. Focusing on only a set of predefined, predesigned and prearranged business models with the corresponding elements aligned to the specific requirements of each, the required controlled environment can be created. As these investment packages - consisting of a business model, financing, demand and regulatory environment aligned – have scalability already built in, the investors can quickly use their newly gained knowledge to increase their business.

Following is a detailed look at the elements of the solution package ordered according to the level within the Regulatory Value Chain (see Annex A), from policy to implementation level, when government or donor activities are described.

2.2.1. TRANSPARENT TARIFF SYSTEM

The core element of any energy market in its infancy, like currently in Afghanistan, is a clear and transparent tariff system that all market players can rely on. It helps the investors to calculate their income and a return on investment, the O&M companies to realize profit, the purchaser of energy a long-term perspective on the development of prices; and the policy makers to determine the technology used and promoted, to set specific geographic preferences, to enhance investments in

certain regions and to increase the access rates to energy evenly over the country. In short, a transparent tariff system for the purchase of power by DABS or customers through DABS is essential to enable any meaningful buildup of private investment into grid connected or DABS operated island solutions in Afghanistan. It creates the basis for private investment while giving a highly effective tool for regional development of basic infrastructure into the hand of the policy makers in the government.

2.2.2. IPP STANDARDS FOR LICENSING

Independent Power Producers are the key players of any energy market especially in the context of Afghanistan, as there are for the foreseeable future no independent transmission operators in place nor is a liberalization of the DABS infrastructure currently on the table. To create technical and quality coherence within the Afghan energy market, it is necessary to define criteria to be met by IPPs in order to qualify as an officially sanctioned and certified IPP. This regulation needs to be enforced by the energy regulatory body, currently under MEW but envisaged to be independent in the future, to ensure the long-term effects of the regulation are met. The standards for IPPs should clearly define all necessary interface standards and data requirements of the network operators to be able to control the national grid centrally. Further data interlinks for transactions and quality of service needs to be set according to national standards to enable a long-term interoperability of the systems and to prepare all RE projects for a national grid connection.

The IPP standards on the other hand must be also transparent, open for application by any investor and company. They have to be applied equally to all applications to ensure fair competition on the energy market. Competition policies need to be in place for safeguard the clients' interest in ever increasing service quality combined with a race to deliver better service for a lower price.

The IPP standards and their application through the regulatory body should be used as a certification for meeting the national and ideally international quality standards in capabilities to deliver quality energy projects. For RE projects another layer of different, technology focused certification could be introduced to ensure only qualified players can access the market at its current state. In the mid- to long-term a relaxation on the ease of gaining access to the energy market should be introduced to increase the number of competitors for the clients to choose from. Since this requires a stable and well-established energy market where clients have the option to select from different offers, such easing currently is not advised.

It is further important to realize, that these standards only apply to companies that are actually building and operating energy infrastructure. An investor, who only wants to invest its money and would assume ownership, should not be forced to fulfill these standards, as long as the implementation of the project is handed over to a qualified and licensed RE company.

2.2.3. TRANSPARENT AND STANDARDIZED POWER PURCHASE AGREEMENTS SYSTEM

The current state monopoly through DABS and approach selected by DABS to negotiate PPAs confidentially are certainly necessary to ensure the basic operation of the Afghan national grid and energy generation capacities. Especially with respect to the large imports, such PPAs need a certain level of secrecy to ensure a solid negotiating position for Afghanistan vs. the exporting countries.

In the context of a free and private investment driven energy market, with currently very high entry barriers and the realization that only private investment can deliver enough generation capacities to slowly catchup with ever increasing demand, such an approach to PPAs for private IPPs is counterproductive. With only one possible negotiating partners, DABS, the IPPs who want to invest into grid connected infrastructure, currently have to negotiate case by case producing different prices and different conditions with each PPA signed in secret. As there is no energy market with a public trade system in place, the real feed-in tariffs are unknown to investors. They cannot determine, if their

investment will or will not be profitable. This instantly leads to an increase in perceived business risk, driving up prices for DABS and customers. Furthermore, with currently heavily government subsidized PPAs, an unsustainable system is established. Only the first comers will have the benefit of relative safety for their investment through guaranteed prices for energy units produced, while later stage investors with bigger projects and longer-term plans would be squeezed out by competitors with better profitability.

Combined with IPP standards and a transparent tariff system, PPAs form the backbone of any larger scale RE projects that either are grid connected or aim to supply an island-grid/mini-grid. For investors, all prerequisites and expectations from a PPA have to be clear in advance to be able to calculate their profit margins. Transparency further supports the enforcement of IPP standards as it binds the IPPs to these standards and locks the IPP and the purchaser into a legal agreement also enforceable through courts. The IPP standards are thus locked in through a public-private and a private-private agreement increasing the probability of adherence to the rules. The transparency of PPAs further ensures, the equal treatment of new market entries compared to already established ones, as the agreements are the same for all market actors.

Once more than one transmission operator is in the market and all IPPs have alternatives to sell their power to, the standards for PPAs could be liberalized to foster more competition with prices determined on an open market/exchange. Technical and interface standards should be kept in place for the long-term while financial and other matters could be reduced or completely abolished.

2.2.4. WHEELING AND CAPTIVE POWER SOLUTIONS REGULATION

To reduce the time for private-to-private or business-to-business offers on the energy market, wheeling and captive power solutions could be promoted by putting in place clear regulations for both cases.

Captive power, the direct and mostly exclusive provision of energy to a single private sector off-taker, can be established within today's regulations, as long as the transmission/distribution lines of DABS are not used. As long as the IPP has a direct line to its off-taker, for example a factory, there is no need to further intervene from the state side. The PPA needs not to adhere to any standards also the tariff can be left to be negotiated between the two private parties leading to a reduced time till implementation starts. This way the development of standards for IPPs, PPAs and of a comprehensive tariff system can be given sufficient time while the private investors can already enter the market with a private partner as off-taker with a self-interest to fulfill its contractual obligations. The limited regulation would only be necessary in the form of the general certification by the regulatory body for energy generators. All other certification would become unnecessary.

Wheeling on the other hand would need a more detailed approach, as it would directly interfere with the activities of DABS in transmission. Wheeling would use the existing transmission or distribution infrastructure of DABS to transport (wheel) energy from the IPP to the off-taker who is using 100% of the IPP's energy for its own activities. No third customer is involved. To establish such a wheeling-offer by DABS, the regulation on the responsibilities of DABS need to be adjusted. Furthermore, technical standards have to be established, if not already covered by the IPP standards, to ensure the interoperability of the electric and data interfaces required for actual grid management and equally important exact transfer tracking. In the long-term, this would further foster investments into grid extensions and thus also be of basic interest to a more and more liberalized DABS.

2.2.5. ADDITIONAL CERTIFICATION OF RE COMPANIES

In order to make investments into RE more attractive, additional certifications would be advised. RE companies trying to gain incentives in form of customs exemptions or tax holidays on profit tax, should be required to fulfill an additional layer of qualifications. For example, the incentives schemes could be tied to a specific certification guaranteeing that an RE company know how to and actually uses only quality equipment and materials to implement RE projects. This certificate could also take the form of a seal by any private association or body that ensures, that its members adhere to higher than publicly prescribed standards. These certifications could also be extended to the importers of RE materials and their products, if they fulfil certain quality expectations. These two factors in combination could again help the banks to determine if a company and its use of materials are eligible for more attractive financing offers.

2.2.6. CAPACITY DEVELOPMENT FOR PRIVATE INVESTORS and FINANCIAL INSTITUTIONS

Both, the private and financial sector are lacking experience and knowledge of the sector.² In order to overcome these shortcomings, it is necessary to increase the capacity in RE project implementation and understanding on both sides.

PRIVATE SECTOR

For the private sector to understand the dynamics of RE projects, it will be necessary to first select an already established group of entrepreneurs and to train them in basic project management, project design, technology uses costs, the regulatory and licensing environment, business development, marketing, customer relationship management and all other basic business management skills. Secondly, these entrepreneurs need to understand the dynamics of the RE market and which technology solutions can be applied on which demand structures. Thirdly the capacity development activities have to support the companies in the development of a first set of business models with all necessary calculations, market analysis and modeling to fulfill all requirements of the banks.

FINANCIAL SECTOR

The banks need to understand the basic dynamic of RE projects, the cash flow streams and profitability characteristics, running times, the demand and current supply, the challenges and the criteria upon which they can assess if an applicant for a loan is actually capable of implementing and operating an RE project. This could be done through a set of training events by experts and by directly linking investors and banks into a development process of business models to foster the common understanding and trust.

By increasing the knowledge on both sides, trust is created in the abilities of the private sector and in the viability of RE projects. This in turn changes the assessment of risk by banks to be more favorable and support the reduction of risk bound financing costs.

2.2.7. STANDARDIZED BUSINESS MODELS

Standardized business models link all solution elements together. They help to determine exactly which financing needs companies have, how the profitability will develop, how implementation is supposed to be sequenced and what time frame is realistic for servicing the first customer, how many customers there will be and thus how the income of the company will develop.

² Please refer to: "Assessment Report – Challenges of Afghanistan's Renewable Energy Industry – Final Report", December, 2018.

To develop a set of standardized business models and to avoid the “donor-driven” approach, it is fundamental to include all stakeholders right from the beginning. These business models have to be therefore developed by the private sector for the private sector with support from a third party.

In the case of RE the process should be sequenced in the following manner:

1. Development of a set of highly specific business models by the private sector already engaged in RE or a union with the support of a donor cumulating in business plans directly useable by any RE company. These business models need to be so detailed, that only with very limited effort it can be converted into a business plan for a company.
2. Dialogue with banks and insurers on the viability, dynamics and financing requirements of each of these business models with exact determination of returns and profitability for all involved.
3. Public Private Dialogue of the RE investors with the relevant line ministries, agencies and DABS on the matching of government policies to these business models, where necessary to fulfil the politically prescribed development goals and balance them with the realistic expectations of the private sector for profitability. These policies could consist of specific incentives on specific technologies or investments into certain regions, tax exemptions on purchased equipment, lower taxation on tariffs, increase depreciation of equipment and materials, etc.
4. Implementation of projects according these standard business models by the private sector financed by private/commercial banks for energy related service provided to private clients and businesses.

2.2.8. ADDITIONAL INSTRUMENTS

Additional options to lower barriers to financing for RE projects shall only be mentioned shortly, as they would require a broader approach with extensive interface management activities and increased financial means:

- Loan default insurance

A state fund guaranteeing the (partly) compensation of defaulted loans given to investors in specific RE projects. The beneficiaries would be banks and insurance agencies. The implementation would at first be administered by a state bank under the close supervision of the Central Bank of Afghanistan to ensure strict adherence to all loan terms set by the government and/or donor organization.

- Investment Guarantee Scheme

Investors (especially foreign investors for big scale projects) could insure their projects or get free insurance on specific types of RE projects covering their damages or losses from failed RE projects. The beneficiaries would be investors investing in to a specific set of RE projects. Implementation could be handled by donor agencies, like the Afghans Investment Guarantee Fund funded in parts by KfW or MIGA, or by a government agency or state bank with strict oversight by the Central Bank of Afghanistan.

- Leasing

Equipment purchases for large scale RE projects, for example wind farms, require heavy equipment. Since many (domestic) RE investors do not possess the financial means to purchase such equipment, a leasing based solution could help lowering the costs for investors. The beneficiaries would be the private investors without the financial means and the constant pipeline of sufficient sized contract to justify equipment purchases. Implementation might be handled by the responsible line ministry, here MEW, or DABS as both have larger budgets and an interest in the quick expansion of the electricity infrastructure. Leasing regulation is currently under development by the Central Bank of Afghanistan.

- Interfaces between projects

By creating stronger interfaces between donor projects, additional and predictable demand can be created for RE projects. For example, an agricultural project focusing on increasing yields and quality infrastructure could increase the demand for RE solutions to electrify pumps and cold storage facilities. Since the agricultural project has predesigned their interventions and can quite exactly determine the loads and demands, the complexity of tailoring an RE solutions and a business model to these demands would be relatively low. These “easy wins” could be multiplied when more and more interfaces are generated between donor projects. The consultant has developed an interface management scheme for IDEA and can be readily available.

2.3. Conclusions

In its current state, the Afghan private RE market is inexistent. The energy market is almost completely dominated by donor and government designed, financed and implemented projects. The RE private sector is further not engaged in RE projects that have a long-term, service oriented and risk-taking character but rather in the wholesale of RE equipment of sometimes questionable quality and aimed at private households as customers. Business to business solutions, energy-as-a-service offers or decentral mini-grid solutions with locally adjusted collection systems are not in place. Finally, prohibiting financing costs raise hard to overcome barriers to RE investment by purely private investors.

To overcome the current deadlock and to enable the free(er) flow of private capital toward private RE projects, it is necessary to increase momentum in the sector. As capacities are low, risks and rates are high, the private sector needs support in overcoming the aforementioned barriers to enter into an otherwise attractive sector. The support needs to address all shortcomings while setting the stage for scalable growth without donor or government interventions, driven by the ever-increasing demand of the general public and businesses held back by the lack of reliable energy supply.

Based on the analytic report and the findings of the stakeholder consultations combined with a fact-finding mission, this report suggests a support scheme in the form of a tailored solution package centered around the solution elements described above. Using a set of business models as the common logic of the design of actions, this approach would achieve all set goals while inducing knowledge and experience about RE projects into the financial and private sector.

The next part will describe the concrete actions for GIZ IDEA further detailing the Solution Package elements with a sequencing designed to fit the current Afghan context and dynamics.

3. Actions

GIZ IDEA has already delivered the basis for RE investments by private sector companies in Afghanistan by creating the necessary policies, laws and regulations during the last few years. This enables a seamless continuation in fostering new investment into RE by Afghan and international investors, more and more independently from government or donor interference.

This continuation needs to close the gap between the policy work and the impact it is supposed to create in form of more investment into RE in the short run and the creation of an energy market in the long run. Based on the analysis above and the deducted recommended general recommendations, a number of actions are recommended based on the core elements of the above presented solution package.

In the following, these actions will be presented and recommended for implementation in the current and possible next phase of GIZ IDEA. The actions will be grouped around the elements of the solution package and sequenced according to the business-model-centered approach. The sequencing is the reverse of the approach suggested in the general solutions package. This is necessary to reflect the actual situation in Afghanistan and to increase the likelihood of real investments within the shortest amount of time while continuing the work on developing an energy market.

3.1.1. STANDARDIZED BUSINESS MODELS

As shown above the development of a set of standardized business models requires a phased approach, closely consulting and supporting the private sector in realizing the currently untapped opportunities of RE in Afghanistan.

AREU as partner

To start the process as soon as possible, the AREU should be used as the main partner for the phased approach. Focusing on AREU has the benefit of having a preselected group of companies interested and mostly active in RE projects. The close relationship with AREU would further help the development process of the business models.

For the sequencing of the Business Model Development process please refer to 2.2.7.

Diverse business models

This report suggests at least three types of business models to be developed with the AREU:

1. *Installation, operation and maintenance of household RE solutions in load and safe centers of the country.* The service is the sale of energy directly to the client by the RE company. Logic: small scale, demand driven projects are easy to develop, implement and supervise in a pilot phase. Load centers also have a bigger purchasing power and higher demand for reliable energy supply. Banks could finance the project implementation. Households in Kabul, Mazar, Herat or any other major city could be potential clients. This kind of model is easily scaled up, as the extension of one households connection to another and the addition of further generation units in this context is easily achieved. The skills to scaling up this business model are exactly the same as used for setting up the basic projects. The private sector thus could instantly increase its business and increase its turnover.

2. *Installation, operation and maintenance of RE solutions directly for businesses.* The energy is sold, not RE equipment or the mere installation of it. This captive power solutions do not require an involvement by DABS and can be highly profitable as quality of service is an essential input for manufacturing and other productive uses of energy. Banks could finance the project implementation.

Industrial parks or single middle to large scale businesses are the natural clientele for such offers. Scalability is given first through the increase in productivity of the customer through a better quality of service and by the automatic growth in demand by the customer itself and its competitors.

3. *Rehabilitations, operation and maintenance of existing RE infrastructure for communities.* The service would be the delivery of energy, although another solution, only focusing on the operation and maintenance, could be established and be determined on a case-by-case basis. With several thousand RE units installed across the country with many of them in dire condition for lack of maintenance, a big market opportunity seems to exist. GIZ IDEA has already engaged in developing such a business plan. This development should be revisited and tailored to the current situation in the country. Here the banks could finance the acquisition of equipment. Most of the MRRD installed RE infrastructure could be a potential entry point to communities and towns for O&M contracts.

Of course, a large number of other business models and opportunities exist in Afghanistan, but it is the strong believe of the consultant that small-scale projects with built-in scalability are necessary to slowly increase the speed of private sector development in RE. It is then up to the private sector to develop their own business models and businesses according to their own market assessments.

The set of business models needs to take into account a number of criteria, which the consultative process between AREU and GIZ should arrive at. There are criteria essential for the design of the models and for their success which need to be positively answered by the business model:

- Access to demand and load centers
- Purchasing power and tested collection system
- Available and viable technical solution
- Scalability of the model without further support from donors or the government
- Required funds, profitability and timing
- Availability of skilled labor
- Required licenses and certificates
- Standard size of each project within the capacities of the private sector
- Marketing campaign and awareness strategy

Banks as partners

It is key to involve the financial sector into the development process to ensure full transparency and trust between the investors and the banks. In this process, the banks can start to tailor financial offers to the need to the specific business models and make them available to the private sector following the developed business models.

Action items for GIZ IDEA

- Establish close operational ties with banks to get their buy-in for the development process and for creating tailored financing offers for the specific business models.
- Guiding a Business Model Development working group with AREU, AREU members, banks and sectoral experts to create a set of instantly implementable business models.

- Organizing a PPD forum to convince and support the government (MEW, MOF, DABS, MRRD) in creating regulatory environment supporting private investment into RE and specifically to the developed business models.
- Guide and implement pilot phase of all developed business models with support for AREU members with investment promotion and generation activities to increase interest by private sector and engage other donors.

3.1.2. CAPACITY DEVELOPMENT FOR PRIVATE INVESTORS and FINANCIAL INSTITUTIONS

AREU Members

The capacity development delivered for both main targets of the interventions needs to be based on the specific business models developed in 3.1.1. This will ensure that the investors and companies are ready to invest and implement RE projects with exactly the right skills. This qualification in turn should be proven by a certificate handed out by AREU to all members that have successfully finished a business model specific training.

Action items for GIZ IDEA

- Capacity development on each of the new business models for the private sector (members of AREU).

Banks

Banks should also receive training on each of the developed business models, to ensure all relevant employees who were not involved in the development process, are aware of the business models, understand their own tailored financing offers and can better service the investors requesting loans. This would further ensure, that the banks have a capacity build up in RE project knowledge creating the necessary basis for future, more complex project developments and corresponding financial products. Finally, these client-facing employees will be enabled to understand the meaning of the AREU certification on skills for business model implementation and this be able to screen for non-conforming and less qualified applicants.

Action items for GIZ IDEA

- Capacity development on each of the new business models for interested banks.

3.1.3. ADDITIONAL CERTIFICATION OF RE COMPANIES

As mentioned in 3.1.2., AREU members acquiring the necessary skills for the implementation business models should receive a certificate giving them access to tailored financing solutions of the banks. In addition, and next to the skill focused certification, the AREU should be trained and qualified to certify high-quality and reliable technology importers and wholesalers. This quality certification would not just enable the customer to check if his contractor is actually delivering a quality service, but also serve as insurance for the banks that the financing is used for the best possible equipment increasing the success rate of the projects and lowering loan default risks.

Action items for GIZ IDEA

- Support AREU in creating certifications for RE equipment, wholesalers and traders.
- Support the increase in awareness in the public in general and at the target audience of the business models specifically.

3.1.4. IPP STANDARDS FOR LICENSING

In order to further reduce the risk of implementation problems, the MEW should increase the technical and capacity preconditions for licensing RE companies through the regulatory department. Compliance with national standards, knowledge of technology and its maintenance and adherence to the regulations are essential to filter out any “free-riders” in the RE market. By strictly enforcing the licensing rules, the regulator can instantly stimulate the banks willingness to finance RE projects. Furthermore, courses for interested banks could be offered by AREU or another organization to ensure the relevant knowledge of the market and of standards is available in financial institutions. In return, the banks are better positioned to create tailored solutions to the need of RE investors and later other energy related investments.

Action items for GIZ IDEA:

- Support the updating of the regulatory body’s RE company licensing regulations, standards and other formal requirements. Specific licenses for the standard business models could be developed to further increase the quality of the RE companies.
- Support AREU with the development of trainings for members interested in RE licensing. This activity could be tied in with the overall capacity development measures of 3.1.2.
- Support AREU and/or the MEW in developing a training for financial institutions interested in offering financing to RE projects and investors. This activity could be tied together with the measures of 3.1.2.
- Support MEW in developing a policy or strategy with long-term planning for licenses as measure of quality and to monitor the skill-needs of the sector by monitoring the quality of implementation and of RE companies overall.

3.1.5. WHEELING AND CAPTIVE POWER SOLUTIONS REGULATION

As shown in 2.2.4. these two options for IPP-to-business services without or only partial involvement of DABS can be a short-term solution for RE investments. IDEA can actively support the creation of such opportunities for the private sector by developing a specific business model.

Captive power

These kinds of solutions require minimal to no regulatory and other administrative work. The main task here is to find the customers willing to pay for a higher quality service than DABS can deliver or as it is available to them currently. Thus here, the support of AREU to find suitable locations and off-takers for the energy produced by an RE company is the main action.

Action items for GIZ IDEA

- Develop a business model for captive power solutions
- Support AREU and its members in finding suitable customers in Afghanistan through market research and active promotion of RE solutions to businesses.

Wheeling

This delivery mode for energy requires regulatory and administrative changes at DABS. DABS needs to open its transmission capacities to third parties and create a billing-system able to accurately count third party feed-in and off-taking by another party who is not a customer of DABS itself. Furthermore, the transmission of third party electricity through the system of DABS needs a new type of standard contract and a transparent transmission/wheeling fee to be charged to all IPPs that only want to use the transmission and distribution network and not sell the electricity directly to DABS. The contract needs to address all circumstance and eventualities possible to ensure that final customers do receive the promised amount of energy. Damages, responsibilities etc. need to be clearly defined and standardized for all wheeling clients of DABS.

Action items for GIZ IDEA

- Cooperate with DABS in the development of a standard wheeling contract.
- Assess the available technical infrastructure and capacities for wheeling along the main lines of the national grid.
- Where technically possible, support AREU and its members in the promotion of this new service to businesses through market research and outreach activities.

3.1.6. TRANSPARENT AND STANDARDIZED POWER PURCHASE AGREEMENTS SYSTEM

As highlighted in 2.2.3., the development of a private sector in RE and beyond requires the state monopoly to be loosened in order to establish some price transparency. This transparency should be introduced for RE investments as a first step, leaving the strategically important imports unchanged. At a later stage, these international PPAs should become a part of the energy market to increase competition and enable the access of private traders.

For increased transparency in RE investments when contracting with DABS, a standardized PPA with all legal and technical standards needs to be developed and made public. Once negotiations are finalized, the signed PPA should be also published for all interested to see, if the tariff system has been adhered to or at least which prices were set.

As these PPAs are relevant for grid connected investments, the development of such standards can be a mid-term goal to prepare for the scaled-up business models to be developed by the private sector itself.

Action items for GIZ IDEA

- Support the creation of a standardized PPA with DABS, laying down the technical and legal standards and preparing the document for the integration of a national tariff system.
- Support DABS in establishing a public database for PPA publishing and price documentation.
- Support the MEW in preparing a policy document for a sequenced, long-term plan for the transition of a monopoly to a liberalized-energy market.

3.1.7. TRANSPARENT TARIFF SYSTEM

The establishment of a transparent RE feed-in tariff system would have the most significant impact on private investment. Since the suggested business models are private-to-private in their initial setup, the tariff system can be developed in parallel to better include all stakeholders. As it is the primary instrument to steer the RE market's geographic and volume development, the development process

needs to be well designed and implemented with care. The development of a tariff system is the most long-term activity suggested, but the most important one for the development of the market and private sector investment. The tariff system should be developed in parallel with an energy market strategy to ensure synergies and strategic alignment.

Action items for GIZ IDEA

- Support MEW with the setup of a permanent working group on the development of a national RE and later overall tariff system setting tariffs based on socio-economic, industrial-development and geographic considerations combined with technology and infrastructure availability.
- Support MEW in formulating the basic technical and economic principles for a tariff system and help with economic-viability calculations to use the tariff system as tool for investment attraction.
- Act as interface to the private sector for increasing the awareness of the tariff systems effects on the overall market.

3.1.8. ADDITIONAL INSTRUMENTS

These mentioned instruments are lying outside of the direct sphere of influence of GIZ IDEA in its current setup. Still, any of these instruments can be actively supported by the project through an increase in its interfacing efforts with other German Development Cooperation project and other donors, like USAID, UNDP or ADB as suggested by the consultant in a prior consultancy. The consultants, during their meetings with other donors have encountered a lot of interest in the more targeted approach as suggested by this report. With a well-designed pilot phase even further cooperation and co-financing opportunities would be available.

3.1.9. LIST OF ALL ACTION ITEMS IN CHRONOLOGICAL ORDER AND WITH AN APPROXIMATION OF NECESSARY AMOUNT OF EFFORT

Action ID	Name of activity	Implementation horizon (short-, mid, long term)	Level of effort required
1.1	Establish close operational ties with banks to get their buy-in for the development process and for creating tailored financing offers for the specific business models.	SHORT	Project team can maintain these contacts.
1.2	Guiding a Business Model Development working group with AREU, AREU members, banks and sectoral experts to create a set of instantly implementable business models.	SHORT	HIGHLY important: International Consultant and local consultant as direct support to AREU and banks. Fundamental for the success of the private sector development segment of the project.
1.3	Organizing a PPD forum to convince and support the government (MEW, MOF, DABS, MRRD) in creating regulatory environment supporting private investment into RE and specifically to the developed business models.	SHORT	Project team has plenty of experience in organizing such event. Consultants could deliver presentations and guide the conversation. Buy-in from all relevant ministries and agencies needed.
1.4	Guide and implement pilot phase of all developed business models with support for AREU members with investment promotion and generation activities to increase interest by private sector and engage other donors.	MID	HIGHLY important: the project team, international and national consultants have to connect the dots created by the processes before and start promotion the idea and push where necessary partners and government to deliver on the agreed changes.
2.1	Capacity development on each of the new business models for the private sector (members of AREU).	SHORT	Business model development consultant can deliver capacity development trainings.
2.2	Capacity development on each of the new business models for interested banks.	SHORT	Business model development consultant can deliver capacity development trainings.
3.1	Support AREU in creating certifications for RE equipment, wholesalers and traders.	MID	International Consultant on best practices in more evolved markets and on technical standards to be met.
3.2	Support the increase in awareness in the public in general and at the target audience of the business models specifically.	MID/LONG	Project team to support AREU and members and government in designing and possible/partly financing outreach events and promotional activities.
4.1	Support the updating of the regulatory body's RE company	MID	Consultants at Regulator to implement updates.

	licensing regulations, standards and other formal requirements. Specific licenses for the standard business models could be developed to further increase the quality of the RE companies.		Updates to be developed by international consultant in close cooperation with project team.
4.2	Support AREU with the development of a trainings for members interested in RE licensing. This activity could be tied in with the overall capacity development measures of 3.1.2.	MID	Project team and national consultants can deliver prepared materials to members.
4.3	Support AREU and/or the MEW in developing a training for financial institutions interested in offering financing to RE projects and investors. This activity could be tied together with the measures of 2.1/2.2	MID	Same as in 2.1/2.2
4.4	Support MEW in developing a policy or strategy with long-term planning for licenses as measure of quality and to monitor the skill-needs of the sector by monitoring the quality of implementation and of RE companies overall.	LONG	Same consultant as for regulatory department creations or same background.
5.1	Develop a business model for captive power solutions	SHORT	Should be tied in with the overall development of standard business models, but treated as fast track option, as these types of project need hardly any interaction with government bodies and could be implemented quickly.
5.2	Support AREU and its members in finding suitable customers in Afghanistan through market research and active promotion of RE solutions to businesses.	SHORT	To be tied in with business model development process. National consultants with guidance from international consultant for market research.
5.3	Cooperate with DABS in the development of a standard wheeling contract.	MID/LONG	International Consultant for international best practice of legal, administrative and technical implementation of wheeling at DABS.
5.4	Assess the available technical infrastructure and capacities for wheeling along the main lines of the national grid.	MID/LONG	Same as 5.3
5.5	Where technically possible, support AREU and its members in the promotion of this new service to	LONG	Once wheeling is established, the project team can support AREU in

	businesses through market research and outreach activities.		promoting this business model, same as 3.2
6.1	Support the creation of a standardized PPA with DABS, laying down the technical and legal standards and preparing the document for the integration of a national tariff system.	LONG	Part of the underlying activity to establish a real energy market. International consultant for international best practice in legal, administrative and technical implementation of a transparent system of PPA contracts.
6.2	Support DABS in establishing a public database for PPA publishing and price documentation.	LONG	Continuation of 6.1, same consultant with national consultants.
6.3	Support the MEW in preparing a policy document for a sequenced, long-term plan for the transition of a monopoly to a liberalized-energy market.	LONG	International Consultant directly supporting MEW senior management in developing the sequence of transition and corresponding legislative changes.
7.1	Support MEW with the setup of a permanent working group on the development of a national RE and later overall tariff system setting tariffs based on socio-economic, industrial-development and geographic considerations combined with technology and infrastructure availability.	MID	HIGHLY important: international consultant with national consultant researching current status of de facto tariffs. Guiding and supporting the creation of a working group and its work on creating a logical framework for the application of tariffs nationwide according to political, socioeconomic and technological realities.
7.2	Support MEW in formulating the basic technical and economic principles for a tariff system and help with economic-viability calculations to use the tariff system as tool for investment attraction.	MID	International consultant in close cooperation with DM MEW and DABS formulating a final document on the principles of tariff setting and its Key Performance Indicators for regular evaluation and updating.
7.3	Act as interface to the private sector for increasing the awareness of the tariff systems effects on the overall market.	MID/LONG	Project team and national consultants support AREU to realize the potential of the tariff system and support the one-stop-shop at MEW to take on an investment promotional role with materials and trainings.

4.

5. General Conclusion

In the current Afghan context, the private investment led development of the energy sector is the only viable solution to the dire mismatch between demand and supply of reliable, sustainable and affordable electricity. Donor and government driven, designed and financed projects, with no mid- to long-term private sector transition are neither flexible enough to adjust to the dynamics of Afghanistan's reality nor is the implementation speed adequate for the increase in demand.

As shown, economic development, especially in FCS contexts, is relying on steady and reliable electricity supply to create more jobs, better products and higher value. In stark contrast to this basic requirement for private investment, Afghanistan is facing a massive challenge as it cannot, neither with government nor with donor projects, satisfy the demand for electricity. The only option currently available is to foster private investments into energy generation, transmission and distribution.

GIZ IDEA in today's context is singularly positioned between the policy making (MEW) and private sector (AREU) with the instruments to directly influence all required elements for private sector development in RE. While other donors have abandoned the policy level concentrating only on self-financed/developed project implementation GIZ IDEA remained focused on developing the policy and regulatory foundation for a private sector led RE market. Without this foundation, any investment is automatically limited in its sustainability as the initial investment is not based on the real circumstances but on an artificial, externally established demand. Further the need for market distorting financial support for operation and maintenance further lowers the transparency of the market for real private investors.

Building on the mentioned policy, regulatory and institutional foundation, GIZ IDEA should "switch gears" to start converting the successes of the last phase into actual investment in the next phase. A shift from institutional development to private sector development and investment generation thus is advised. As the current situation in Afghanistan creates a very challenging setting for such a shift, it is essential to remain focused on the goal and use the limited resources (time and funds) in the most effective way. Focusing of all interventions aimed at enabling and promoting private investment can be achieved by determining the smallest common denominator of all parties involved.

In the case of banks and RE investors this denominator are business models. The business model determines the success of the project, the profitability and the viability combined with technology solutions that satisfy a concrete demand while remaining scalable. All these points help to understand a project, thus reducing the assumed risk, enabling easier access to financing and starting actual investment. It further helps to prepare all required capacity development interventions for the private sector and the banks exactly addressing the short comings of these actors. This approach ensures, that all elements required to kick-start private investment are designed and implemented along a common logic and towards the common goal of making actual investment viable. It is this common logic that GIZ IDEA can deliver. It can support all necessary stakeholders in gaining exactly the right knowledge and information to enable and start investments.

Finally, GIZ IDEA can in the mid-term prepare the energy sector for the creation of a real energy market increasing investments beyond any donor or government driven initiative. Through directly enabling private investments, GIZ IDEA will also be positioned to deliver on the impact indicators usually met by the Financial Cooperation's large-scale distribution and generation projects through directly supporting the creation of new generation capacities and connecting more and more households and businesses to reliable and sustainable electricity. At the same time, each job created in the RE sector

connected to the activities of GIZ IDEA can be counted towards the success of the project. All these indicators can be met without a single direct construction award or other infrastructure related investment by the project itself while attribution remains clear and direct.

The consultants advise GIZ IDEA in preparation for the next phase to consider a significant shift of its resources and activities towards private sector development in RE based on a set of concrete, implementable business models and the alignment of all required elements for direct investment, most importantly project financing by Afghan banks.

Annex A

The Regulatory Value Chain

(RVC)

The Regulatory Value Chain is an attempt to explain the necessity to plan development cooperation projects and interventions in any sector and on any level (macro to micro) with all required levels to be aligned in mind to achieve the impact set. Following this perspective on reform activities suggests a reverse-engineering approach from impact to policy level (represented as orange arrows). Below graphic representation of a RVC and explanations suggest a definition of the relevant levels of intervention for project design and implementation. The RVC concept thus also forces all projects to ensure the alignment of the RVC to the outcomes expected at the implementation level. Projects thus will need to address all levels, either by the project's own resources or by closer cooperating with other projects or other donors/government bodies.

Policy level

This is the level where strategic and sector wide policy decisions are codified into a document. At this level the topics remain on a very general level and responsible public institutions responsible are named for further definition and technical implementation.

Law, Directive, Process/Specification levels

These levels need specific regulatory reform and capacity building to arrive at the desired impacts formulated on the policy level. These levels would be the target levels of the institutional development activities of IDEA.

Implementation level

This is the final level of the RVC. All USAID IPP and SEDEP VC intervention of IDEA have to aim to create effects on this level, otherwise neither new IPPs nor the users of RE in the Agribusiness sector will receive any benefit from the interventions on the higher RVC levels.

Example of full RVC by IDEA

Here it is assumed, that the policy level is completely covered by the Energy Policy for Afghanistan and that all Institutional Development activities of IDEA should be conducted within the policy defined areas. Thus also all USAID IPP and SEDEP VC relevant activities will have to be located within the reach of this policy.

The example on the right side of the graphic shows, how the goal on the impact level "Customs exemption for RE technology" is inserted on the policy level. As the arrows highlight the way in which the input from USAID IPP or SEDEP VC can be integrated into IDEA's workplan and product design. Practical effects required by the IPP project and the SEDEP VC should trigger an upward cascade of necessary intervention and regulatory reform finally arriving at the core document, the Energy Policy for Afghanistan.

Regulatory Value Chain

